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<b>Notice of Allowability</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/071,987	TAKEKUMA, AKIRA	
	<b>Examiner</b>	<b>Art Unit</b>	
	Jennifer M. Dolan	2813	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to Amdt of 3/2/05.
2. ☒ The allowed claim(s) is/are 1-5, 7-14 and 16-18.
3. ☒ The drawings filed on 08 February 2002 are accepted by the Examiner.
4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☒ All    b) ☐ Some\*    c) ☐ None    of the:
    1. ☒ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

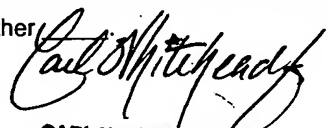
Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
  6. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
    - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
      - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
    - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

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| <ol style="list-style-type: none"><li>1. <input type="checkbox"/> Notice of References Cited (PTO-892)</li><li>2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)</li><li>3. <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),<br/>Paper No./Mail Date _____</li><li>4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit<br/>of Biological Material</li></ol> | <ol style="list-style-type: none"><li>5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)</li><li>6. <input type="checkbox"/> Interview Summary (PTO-413),<br/>Paper No./Mail Date _____</li><li>7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment</li><li>8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance</li><li>9. <input type="checkbox"/> Other</li></ol> |
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**CARL WHITEHEAD, JR.**  
**SUPERVISORY PATENT EXAMINER**  
**TECHNOLOGY CENTER 2800**

## **DETAILED ACTION**

### **EXAMINER'S AMENDMENT**

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

The application has been amended as follows:

**In line 14 of claim 18, "lot" has been replaced by -slot--.**

### ***Allowable Subject Matter***

2. Claims 1-5, 7-14, and 16-18 are allowed.
3. The following is an examiner's statement of reasons for allowance:

Regarding claims 1-3, 7-14, and 16-18, the primary reason for allowance is the combination of using MID electrical traces on a cup with using separate first and second leads received in vertical slots in the cup, wherein the MID traces and the leads are connected inside the slot space at the center sides of the leads, in addition to the other limitations in the claims.

The prior art of record does not teach the combination of MID traces and separate metal leads received in a vertical slot and connected therein. The closest prior art configurations include using MID traces with MID-coated resin leads contiguous with the cup component (see Japanese Patent Publication 06-090029 to Itou et al.), using MID traces with a leadless planar

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contact surface (see US 6,331,063 to Kamada et al.), using separate metal leads received in the cup without MID traces (see fig. 4A-4C of Itou or US 5,985,696 to Brunner et al.), or using a mounting cup with a MID connection patterns connected to leads, wherein the cup is disposed entirely on top of the leads (see JP 2000-323755 to Nozoe et al.) There is no motivation in the prior art to combine these teachings such that a cup having MID connection traces also has leads received in vertical slots in the cup, and there are further no teachings whatsoever in the prior art to connect the MID traces to the leads in the slot space at the center sides of the leads. Since these claimed limitations lead to advantages such as improved heat dissipation and improved resistance to thermal stress on the LED chip and leads, and since elements of the claimed structure are not taught in the prior art, it is the examiner's opinion that the invention of claims 1-3, 7-14, and 16-18 would not have been obvious to a person having ordinary skill in the art.

Regarding claims 4 and 5, the primary reason for allowance is that there is no suggestion in the prior art of including elements that monitor light emission or heat generation directly on the reflecting cup of the LED. Considering the tight size tolerances for such LED devices, it is the examiner's opinion that a person having ordinary skill in the art would be motivated to keep light emission or heat generation sensors separate from and external to the device, as is typical in the prior art, rather than fabricating such sensors in a small chip, and then incorporating them into the package. The closest suggestion of a heat generation monitor in the prior art MID-structure LED devices is in U.S. Patent No. 6,614,103 to Durocher et al., which teaches the use of a heat sink element in each LED device. The examiner considers this to be distinct from the heat generation monitor claimed in the present application, because the heat sink of Durocher

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simply removes heat from the LED without in any way measuring or checking the level of heat generation in the LED.

4. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jennifer M. Dolan whose telephone number is (571) 272-1690. The examiner can normally be reached on Monday-Friday 8:30am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Carl W. Whitehead, Jr. can be reached on (571) 272-1702. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jennifer M. Dolan  
Examiner  
Art Unit 2813

jmd